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TUNA FISHERY OF WESTERN AND SOUTHERN AFRICA[1/]

Among the dozens of species of fish and shellfish of commercial importance known to exist in the waters of West and South Africa, the spotlight of international attention was turned on tuna about three years ago. In the short space of time since 1961 exploitation of the tuna resources in this part of the world has proceeded at a rapid pace. This report will take stock of the present situation and look into the future.

Although over 95% of the world's tuna production is consumed in the canned form, the canning of tuna has not yet become a very well established part of the African scene. The bulk of the tuna production is landed either fresh or frozen-at-sea at one of the six trans-shipping points now set up in West African ports. These facilities, each of which is either wholly or partly owned by an American firm, are at:

Dakar, Senegal
Freetown, Sierra Leone
Monrovia, Liberia
Abidjan, Ivory Coast
Accra, Ghana
Pointe Noire, Congo-Brazzaville

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1/ Information supplied by United States Embassy, Abidjan, Ivory Coast.
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The table below gives basic information regarding each trans-shipping port:

West African Tuna Trans-shipping Ports

	Storage Capacity (tons)	Freezing Capacity Tons/Day	Est. No. Vessels Supplying Tuna* Japan	Spain	French
Dakar	2000	100	10	14	84
Freetown	2500	160	6	34	-
Monrovia	1500	100	6	14	-
Abidjan	1600	120	13	4	-
Accra	5500	100	14	-	-
Pointe Noire	1500	50	6	6	15

*NOTE: Those fleets land tuna at various ports seasonally. The figures should not be totalled.

Further details of the tuna operations at the above six points are given below:

Dakar: Here the trans-shipping operation is conducted by SOFRIGAL, a company owned jointly by local interests, a French company, and Star-Kist. Plans are underway for increasing the present 2000-ton storage capacity of the plant to 3000-3500 tons, and the ice-making capacity from the present 20 tons per day to 40. The tuna season is normally from November to May, with peak production between January and April. Principal species landed here are yellowfin and skipjack, with some albacore being landed by the Japanese long-line boats. Roughly about one-half of the fish handled by the plant goes to Star-Kist in Puerto Rico and one-half to French canneries in France. See below for information on the tuna canning operations at Dakar.

Freetown: The Freetown operation is wholly owned by VanCamp Seafood Company. Although there are only about six Japanese vessels of the Nichiro Fisheries Company based at Freetown, other Japanese boats will land tuna here from time to time. As in Dakar, principal species are skipjack and yellowfin, with albacore third in importance. A fleet of 34 Spanish bait boats is now operating out of this port. An interesting project now underway is the establishment of a live-bait supply for the tuna fleet, the bait to be caught by local fishermen and stored in "cars" in the water. When fully implemented, this is expected to save the fleet about 36 hours each on each trip.

Monrovia: Star-Kist Foods, Inc. operates in Monrovia in cooperation with Liberia Cold Stores Co. in a new freezer plant having a capacity of 1500 tons storage and capable of brine-freezing 100 tons of fish per day. During the season from November to March some 14 Spanish bait boats supply this plant with yellowfin and skipjack. The Japanese long-liners based at Tema, Ghana also bring in their catch to Monrovia as convenient. It is anticipated that a small fleet of Nationalist Chinese tuna vessels will enter the tuna fishery some time in late 1965, using Monrovia as their base of operations.

Abidjan: Tuna trans-shipping activities at Abidjan are conducted by SOGIP, a company composed of Italian interests (a Mr. Benatoff), a Japanese fishing firm (Taiyo), and VanCamp Seafood Company. Started in 1962, this operation has a freezing capacity of 120 tons of fish per day, storage for 1600 tons, and ice-making capacity of 70 tons per day.

The number of boats calling with their catch at Abidjan varies widely from year to year as well as from season to season. Activity is regulated by world tuna market requirements rather than by anything that can be controlled locally. For a prime example, it might be said that between six and a dozen representatives of the far-flung Taiyo fishing fleet of Japan deliver fish more or less regularly to Abidjan. In the course of a year, however, as many as 30 different vessels of this organization might make one or more calls.

Japanese boats are long-liners. They deliver many kinds of fish in addition to tuna and albacore, such as swordfish, black and striped marlin, moro, shark, Spanish mackerel and sailfish. Albacore is always brought in in the round and constitutes the largest bulk of any one specie. Almost all the rest of both tuna and other species are delivered gilled and gutted, dressed with tail or in chunk form. The tuna catch in order of quantity delivered, is yellowfin, bigeye, and bluefin. Japanese deliver practically no skipjack to Abidjan, and, repeating, almost none of this "lightmeat tuna" is delivered in the round.

Effectively, no albacore nor light meat tuna is shipped from Abidjan to Japan. Albacore and yellowfin, with an occasional small quantity of bigeye, are shipped to American interests in Puerto Rico for canning. Bigeye, bluefin, some albacore and yellowfin, and some non-tuna species, are shipped to Europe. In order of quantities shipped from Abidjan, the countries of destination are Italy, Yugoslavia, Germany and Spain. The balance of Taiyo-delivered fish goes to Japan.

Since 1962, a fishing fleet from the northern coast of Spain composed entirely of Basque personnel, has fished local waters and delivered their catch either to Abidjan or to Freetown, Sierra Leone, whichever port is more convenient to the area of fishing activity. Until the present time, these Spanish boats have all been small (20-50 ton hold capacity), they have depended on ice for refrigeration, and they have been bait boats, catching their fish with pole and line. They came down seasonally, arriving around the middle of October and staying until the first of May (this gives the extremities of the season; actually, the Spanish season is rarely of more than four months duration). The number of vessels in the Spanish fleet grew from 20 in 1961-62 to approximately 60 in 1963-64.

The 1964-65 campaign indicates a changed completion of this fleet in the following respects: several larger boats have been built (size varies from some 80 ton capacity to nearly 200 tons); these new boats have brine refrigeration systems, and they are purse-seiners. The number of the smaller ice boats has diminished to some 30. No pattern of accomplishment has developed at the time of writing this report, but indications are that success will cause the new refrigerated seiners to remain in this area for extended periods, possibly on a year-round basis.

Historic yield of this fleet has been approximately 40% yellowfin and 60% skipjack, the only two species involved. Markets have varied percentage-wise according to contractual agreement, but the fish has been shipped to Puerto Rico, Spain, and Italy-Yugoslavia. This fleet delivers fish only in the round.

There is a fleet of four small, old Japanese-built long-liners fishing out of Abidjan. Their catch is destined primarily for the local market but is not presently qualified for export to France due to non-compliance with crew-percentage requirements mentioned below. This group's yield is the same as that of the Taiyo fleet in respect to species, but on a much smaller scale.

A new cold storage plant with a storage capacity of 3000 tons is soon to be commenced in Abidjan. This will either supplement or replace the present plant, depending on the outcome of negotiations presently underway. See below for information concerning tuna canning in Abidjan.

Accra: Fishing operations in Ghana, while spoken of and thought of usually as being in Accra, are actually headquartered at Tema, a new port recently built some 25 miles outside of Accra. The Star-Kist Company here works in cooperation with Ghana Cold Stores Company, a government-owned company operating a large freezer plant having a capacity of 4500 tons of storage and a smaller plant of 1000 tons capacity. During the season from October to May some 14 Japanese bait boats and long-liners, supplemented by occasional Spanish, French, or other vessels, supply the tuna operation.

Pointe Noire: Just completing its first year of operation, this plant is operated by a company called SOCOFROID, composed of Star-Kist, a French company, and several local and banking interests. With a storage capacity of 1500 tons, and brine-freezing capacity of 50 tons per day, the operation is supplied by about 6 Japanese, 6 Spanish, and 15 French tuna vessels. Shipments of frozen tuna are made mostly to Puerto Rico, France, and Spain.

Based upon information supplied by the various plants described above, the details of which are, for obvious reasons, not for publication, it is estimated that some 35,000 to 40,000 tons of tuna annually are taken from West African waters for trans-shipment in frozen form to other countries. This estimate is based on figures for the 1963-64 season and figures for the 1964-65 season to date. As fishing effort continues to increase, there is little doubt that the total catch will increase accordingly.

NOTE: It should be noted that, in addition to the six trans-shipping activities above mentioned, the recent year has seen a surge of activity at Las Palmas, Canary Islands. Unfortunately, detailed information about the tuna operations at Las Palmas is not available at the present writing. It is known, however, that plans are underway for the building, starting in 1965, of a new $8 million fishing port. There are about six plants canning tuna in a small way in Las Palmas, the bulk of the production of about 3000 tons annually going to Italy, other European countries and a small amount to the U. S. While a number of Spanish boats base at Las Palmas, the bulk of the tuna activity is being carried on by a sizeable fleet of Japanese vessels. These are all long-liners, catching albacore and yellowfin. On one occasion in May of 1963, as many as 32 Japanese vessels were counted in port of Las Palmas. Except for the small amount landed for the use of local canneries, the tuna is transshipped frozen to Europe, Japan, and the U. S. It has also been reported that a base for Polish fishing vessels was to be opened at Las Palmas in February 1964, providing for cold storage facilities for up to 1500 tons of fish. The status of this project is not known at this time. It is hoped that further information on the Canary Islands fisheries will be available for reporting in the near future.

Tuna Canning

At the present time tuna canning is being carried on to some degree in Morocco, Senegal, Sierra Leone, Ivory Coast, Congo-Brazzaville, and Angola. In the case of Morocco, Senegal, Ivory Coast, and Congo-Brazzaville, it should be noted that in each of these ex-French colonial states the tuna canning industry is based almost entirely on the French market. Each year, in October, a meeting is held in France at which representatives of the French government and of each of the African countries involved meet with tuna industry representatives to decide on the country quota of canned quota and the price to be paid for the

tuna. An important feature of this arrangement to be noted is that the price paid for tuna for this purpose is set at a price about 20 francs CFA per kilogram ($80 per metric ton) higher than the prevailing world market. In return for this, the tuna under the quota is allowed to enter France duty-free. Another feature of this arrangement is a "French origin" requirement set for tuna to be used either for canning for the French market or for export in frozen form to France. To be eligible for either of these purposes, the tuna must be caught by French-registered vessels or by boats registered to countries under varying degrees of French domination. In short, this means former French colonies. However, simply registering a vessel under, for example, the Ivory Coast flag does not automatically qualify the fish for export to France, or for canning for the French market. A varying percentage (at present 75%) of the ship's personnel must be either French or French "colonial."

Information on the nature and extent of canning activities, together with notes on other tuna matters of interest in the various coastal countries starting at the northern end of the continent, follows:

Morocco: While stocks of tuna, largely bluefin and skipjack, are thought to be considerable in Morocco's coastal waters, the industry so far has been little developed. There are 10 canneries packing tuna only, while there are a total of 79 other plants packing both sardines and tuna. Of the latter, however, tuna canning represents only a small part of their activity, which is devoted mainly to the sardine business. These plants are located in Tangier, Nador, Larache, Al-Hoceima, Kenitra, Mohammedia, Casablanca, El Jadida, Safi, Essaouira, and Agadir.

A new tuna cannery built in Tangier in early 1964 made its first short trial run in April and is now reported to be fully operative. This plant is not expected to begin commercial operations until May 1965. With a capacity of 60 tons of canned tuna per day, the plant is reported to be planning mostly on the Italian and Swiss markets, but may attempt to enter the U.S. market if it is permitted to use other than locally caught fish. So far the company has not applied to the Moroccan government for such permission, and it appears doubtful that the United States will see canned tuna from this source in the immediate future.

Total pack of tuna for these plants has ranged from 130,000 cases (100 1/4's) to about 250,000 cases. About 2/3 of this production goes to France or the Franc Zone, and 1/3 to Italy. Morocco itself consumes negligible quantities of canned tuna.

In the fall of 1964 a joint Moroccan-French tuna exploration program was launched in an effort to explore the tuna grounds and more fully determine the resource. A French tuna vessel, equipped for both purse-seining and live-bait fishing, will operate for one year carrying out a research project as closely as possible to the recommendations of a U.S. tuna expert who conducted a tuna fishing survey in Morocco in July 1963. It is possible that the results of this survey might encourage the expansion and modernization of the Moroccan tuna industry.

Mention should also be made of the rather unique method of fishing for tuna employed off the northern coast of Morocco called madragues. These are a system of fixed nets, or traps, set out more or less at right-angles to the shore in April of each year. Six of these madragues (at Mehdia, Larache, Arsilah, and Tangier) catch migrating bluefin in May and June as they move from the Atlantic toward the Mediterranean. These are usually large bluefin, averaging 400 pounds each. Catch of tuna by this method was 4,632 tons in 1963, 6,400 tons in 1962 and 4,600 tons in 1961.

Mauritania: Although there is at present no tuna industry established in Mauritania, one firm - Société Mauritanienne de Pêches et Conserves (SOMAUPECO) - has been organized at Port Etienne for the purpose of exploiting the tuna fishery. A newly completed freezer plant with a storage capacity of about 600 tons, freezing capacity of 20 tons per day and ice-making capacity of 25 tons per day, also includes space for a contemplated canning operation. Four French-built vessels have been purchased and a fifth chartered, each vessel having a capacity of 100 tons per month. SOMAUPECO reports that it has already entered into agreements to market its entire production in France, Italy, Germany, and Yugoslavia.

Senegal: With an annual French quota of 11,000 tons, Senegal provides about 25% of the total consumption of canned tuna in France. While there were originally seven plants canning tuna, consolidations in the last three years have resulted in there now being only three active plants. Two of these, SAPAL and Conserveries du Sénégal are in Dakar, and one, SCAF, is in Rufisque. About 95% of the total annual production of 11,000 tons of canned tuna goes to France under the arrangement noted above. The government of Senegal is placing high priority on the development of a Senegalese tuna fleet and the construction of a "tuna complex" at Dakar. Five tuna boats have been ordered from France, with delivery scheduled for December 1965, and four more are on order from the United Kingdom to be delivered in August 1965. These vessels will be 26 meters in length, with a capacity of 90 tons each. It is planned that the fleet will be built up to number 25 in four years. A training school, established in October 1964, is designed to train 1500 sailor-fishermen a year.

Guinea: Guinean officials at the Office des Peches Maritimes (OPEMA) acknowledge the existence of abundant tuna fisheries off the coast of their country. The principal tuna species is yellowfin. Despite the richness of their fisheries the Guineans themselves have not exploited them, owing to a lack of funds and equipment.

There is no local demand for tuna because the Guineans do not have a taste for tuna and prefer to eat other kinds of fish. There is a cold storage warehouse at the port of Conakry, but there are no tuna (nor any other) processing facilities. Other than the French vessel, referred to in the report on foreign fishing operations, no other foreign vessel uses the cold storage warehouse. The fish caught by the French, however, are not tuna.

Because of the lack of activity in the tuna field, government authorities have thought it unnecessary to publish local regulations and licensing requirements for tuna fishing. To obtain a license a Guinean applies directly to OPEMA. A foreign fisherman must apply to the Ministry of Rural Economy which forwards the application to OPEMA for the latter's approval. There are no standard forms, and the applicant furnishes such detailed information as he himself considers pertinent to his request for a license. Except possibly for its recent decree extending Guinean territorial waters to 130 miles, the Government of Guinea contemplates no programs for tuna conservation or assistance to local fishermen.

There was terminated in 1963 a short lived Guinean-Yugoslav fishing venture which had been established for the purpose of exploiting the Guinean tuna fisheries. This joint enterprise, ASTRA, operated from October 1962 to June 1963. Midway through this period the Yugoslavs apparently realized that tuna processing facilities in Guinea were non-existent and representtatives of ASTRA attempted to sell in Senegal their tuna that had been cold stored at the port of Conakry. Senegal reportedly had the processing facilities which Guinea lacked, but it also had on hand all the tuna it needed at that time. The Senegalese supply reportedly was the result of a joint tuna fishing venture that it was conducting with a Japanese company.

To get rid of its tuna, the Government of Guinea decided to sell the unprocessed catch at a depressed price in Conakry, and the revenue received from the sale was given to OPEMA. When the Guinean-Yugoslav partnership was amicably dissolved in June 1963, the Yugoslavs took home with them the two tuna fishing vessels which they had brought to Conakry at the project's inception.

Sierra Leone: For the past year a pilot canning operation has been carried on at Freetown in an attempt to develop a low-priced pack of canned tuna for the local market and possible export to other African countries. The spicy pack has met with moderate success in the Freetown area, but further refinement of equipment is contemplated before expanding sales to a larger area.

Ivory Coast: At the present time two small canneries are producing canned tuna in Abidjan. As in the other French-speaking African countries, France accounts for the bulk of the sales, in this case 80% for the larger of the two and 100% for the smaller. The French quota for Ivory Coast is 2200 tons, which is far below the capacity of 30 tons of tuna per day for SCODI and 15 tons per day for Abidjanaise. Both oil and brine packs are put up at both canneries, in the standard "1/2" and "1/4" sizes. At SCODI a tuna in tomato sauce is also packed, and recently introduced for the African market was a tuna and rice pack, well spiced. This plant is tied in with SCAF in Senegal, where the institutional sizes of one brand are packed while the consumer sizes of the same label are packed in Abidjan. In addition to the 80% exported to France, SCODI exports 10% of its annual production to other West African countries and sells the remaining 10% in Ivory Coast. At the Abidjanaise plant the principal activity is pineapple processing, where some 25 tons a day of pineapples are processed into juice and canned pineapple. The tuna canning operation is, for the moment at least, secondary to the pineapple business.

Under the governmental plan for the development of a "Port de Pêche" being pushed rapidly and already partly accomplished, there are plans for a tuna canning plant of a capacity of about 4,000 cases per day. This is to be located next door to a cold storage plant of 3000 tons capacity and, according to present schedules, may be started in about two years.

Congo-Brazzaville: In Pointe Noire a small cannery, owned by a company called SAPAC, produces canned tuna on rather a spasmodic basis. The French quota of only 300 tons per year limits the operation of this plant to 1 to 2 months of the year. Plant capacity is from 300 to 400 cases of 48 250-gram cans, in oil, tomato sauce, or brine. Again almost the entire production goes to France.

Angola: In Angola the tuna fishery is carried on by 100 to 150 hand-line boats of 60 to 70 tons each. Principal species caught are yellow-fin, skipjack and little tuna. Recently catches of big-eye tuna were increasing. There are 6 plants canning tuna, 4 in Benguela and 2 in Mocamedes, the total production in 1963 being 1913 tons. Tuna is packed in oil or brine in can sizes ranging from 250 grams to 5000 grams. A large part of the production, however, is for the U. S. and Italian markets, the former being in the 4-pound size and the latter being in a 5-pound size. Almost all of the production of canned tuna is for export.

Plans have been made for an attempt at purse seining for tuna during the present season, using special gear sent over from California. If this is successful it may well, of course, have a profound effect on the future of the Angolan tuna industry.

South Africa: Within the past two years a surge of interest in tuna fishing has taken place in South Africa. As an example of this interest, one company has just taken delivery of two combination long-liners and purse-seiners of a length of 83 feet and another firm has placed an order with a Durban, South Africa ship-builder for five 300-ton refrigerated tuna vessels. These vessels will be delivered starting in April 1965 and will use the long-line method of fishing.

South Africa's Division of Sea Fisheries has undertaken research work to determine the nature and extent of the tuna resources along the west coast of South Africa. In a report* issued in November 1963, which was preliminary only and based upon one year's observations, the following conclusions were drawn and outline of further investigations given:

Summary

During the past three years we have witnessed rapid acceleration of fishing effort on the stocks of Atlantic tropical tuna. While this report deals with that effort on the Eastern side of the ocean, there seems to be little doubt that West African stocks of tuna are closely related to those in other parts of the Atlantic. Much research is needed, of course, on this point in order to establish migratory patterns for the yellowfin, albacore, skipjack, bluefin, and other species. It is indeed essential that an active and effective tuna research and regulatory commission be established for Atlantic tuna at the earliest possible date in order that appropriate measures for rational utilisation can be taken before it is too late.

*Division of Sea Fisheries Investigational Report No. 47, entitled "A Preliminary Report on South African West Coast Tuna," by B.van D. de Jager, C.S. de V.Neogen, and R.J. van Wyk.

The main conclusion to be drawn from the tuna survey is that four species of tuna occur off the Cape west coast in considerable numbers. The fish can effectively be taken by means of the Japanese type of longline. Although preliminary indications are that commercial exploitation might be profitable, too little is known of the long-term pattern of occurrence of the fish to be certain that they will always be present in sufficient numbers to justify commercial exploitation. Future investigations will be conducted in two phases. During the first phase, which will commence immediately, investigations will be aimed at establishing those areas in which tuna are most likely to occur. This will involve periodic exploratory fishing for tuna. Attention will also be given to alternative catching methods and especially to the use of the purse seine net. In other words, the first phase will be concerned with those aspects which have to be known to exploit the species effectively. During the second phase, which will not begin until a sizeable commercial tuna fishery exists, attention will be given to a study of the population dynamics of the tuna and to the influence of exploitation on the population structure. In other words a study of those aspects which have to be known in order to regulate a commercial fishery effectively."

As of September 1964 it was estimated by the Division of Sea Fisheries that between 30 and 40 ex-pilchard seiners had converted to tuna long-lining, at least for the months when pilchard fishing is not permitted. There were also at that time eight companies engaged in the tuna fishery.

On the east coast of South Africa, the Indian Ocean side, recent developments in the tuna fishery have been even more important. One Japanese company has established a trans-shipping operation at Durban, and a fleet of Japanese long-liners is now based at this port. This operation is so new that significant statistics are as yet not available.

Joint Fishing Operations

Joint fishing operations are widespread throughout Western and Southern Africa. In all cases use of port facilities is extended to the foreign-flag vessels. These include fuel, ice where used, provisions, water, and repair facilities as they may be available. Freezing and cold storage facilities are also commonly used.

In the case of the six tuna trans-shipping activities listed above, the joint operation consists of a shore-based company usually composed of local, European, and U.S. interests working with Japanese, Spanish and/or French vessels supplying the tuna. Local representatives of the Japanese companies involved are usually resident at the port, and full support services are provided. Japanese practice has recently been to rotate their vessels back to Japan every two years, and their crews are now being rotated by air transport every year.

Research and Conservation Activities

In view of the rapid development of the Atlantic tuna fisheries, both in the Western Atlantic and the Eastern Tropical Atlantic, the question of research and possible conservation measures naturally comes to the fore. This matter has been under study for over two years by the Fisheries Division, Food and Agriculture Organization of the United Nations. At a recent meeting it was decided to propose the formation of an Atlantic Tuna Commission for the rational utilization of Atlantic tuna, and it is expected that 1965 will see further steps taken toward the formation of such a group.

In the meantime, the United States Bureau of Commercial Fisheries has launched a program of tuna research in the Gulf of Guinea designed to provide much-needed information and data on the movements, feeding habits, and stocks of the various tuna species found in these waters. Arrangements have been made at each of the six tuna trans-shipping points from Dakar to Pointe Noire for a cooperative program involving the freezer operation, the fishing fleets, and a locally-based research group to secure catch data (including area of catch, depth of water, temperature of water, etc.), fork-length measurements, stomach samples, and gonads from selected fish. Expected to actually commence early in 1965, this coordinated research program will extend over a number of years, with some preliminary results available in perhaps two years. In the meantime the Bureau of Commercial Fisheries research vessel GERONIMO will return in February 1965 for its third Gulf of Guinea cruise in connection with this program.

Areas of Catch

Much work needs still to be done to properly define the areas where Tropical Atlantic tuna are caught at various times of the year. As described in the preceding section, a cooperative program is about to be launched which will be of great help in this area. Oceanographic research, too, which is being carried out by some of the West African countries individually on a small scale and by the U.S. Bureau of Commercial Fisheries on a larger scale, will provide needed information on the surface and sub-surface currents and temperature conditions which are known to be an important factor in tuna migrations.

It can be expected that West African tuna operations will continue at about present levels for the next two to three years - with one reservation. If the Japanese attempts at two-boat purse seining with 2000-meter seines, now being carried on, prove successful there can be a major increase in tuna production from these waters. This can have far-reaching effects, both on the life of the fishery itself, the size and nature of shore installations, the type of fleet, and the world market. The next two to three months should tell the tale.

In the offing - some two to three years hence - are possible tuna canning in Mauritania, probably expanded tuna operations in Senegal, almost certainly expanded tuna operations and tuna canning in Ivory Coast, and almost certainly expanded tuna operations in South Africa. There can be no question but what the next several years will see developments taking place in the tuna fishery of Western and Southern Africa having profound effects on the world's tuna industry.